

What is claimed is:

1. An image forming device comprising:
 - a developer container that accommodates developer;
 - a developer amount detector that detects a remaining developer amount accommodated in the developer container;
 - a display;
 - a memory that stores data representing a remaining developer amount detected by the developer amount detector; and
 - 10 a controller that performs a warm-up operation and that, during the warm-up operation, performs a calculation based on the remaining developer amount detected by the developer amount detector and on the data stored in the memory and controls to display a status of the remaining developer amount on the display based on results of the calculation.
 - 15 2. The image forming device as claimed in claim 1, wherein the memory stores data representing remaining developer amount detected by the developer amount detector before the warm-up operation, the calculation performed by the controller including comparing the remaining developer amount detected by the developer amount detector during the warm-up operation with the remaining developer amount indicated by the data stored in the memory, the controller controlling to display a larger of the remaining developer
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amount detected by the developer amount detector during the warm-up operation and the remaining developer amount indicated by the data stored in the memory.

3. The image forming device as claimed in claim 1,
5 further comprising:

an image forming unit that, under control of the controller, forms images using developer from the developer container; and

10 an agitator provided in the developer container, the agitator agitating the developer accommodated in the developer container, wherein during the warm-up operation the controller controls to drive the agitator and does not control the image forming unit to form images.

4. The image forming device as claimed in claim 1,
15 further comprising an image forming unit that forms images using developer from the developer container, wherein the controller, while the image forming unit is forming an image, controls to display the status of the remaining developer amount detected by the developer amount detector and not to
20 display the status the remaining developer amount indicated by the data stored in the memory.

5. The image forming device as claimed in claim 1,
wherein the controller determines the status of the
remaining developer amount and controls to display the
25 determined status, the controller determining the status of

the remaining developer amount as one of:

a full state when the developer container is substantially filled with developer,

an empty state when the developer container 5 accommodates substantially no remaining developer, and

a low state when the developer container accommodates less remaining developer than in the full state and more remaining developer than in the empty state.

6. The image forming device as claimed in claim 1,
10 wherein, before performing the warm-up operation, the controller controls the display to display a remaining developer amount detected by the developer amount detector before the warm-up operation, the data stored by memory representing the remaining developer amount that was
15 displayed on the display based on the detection by the developer amount detector before the warm-up operation.

7. The image forming device as claimed in claim 1,
wherein the developer container accommodates developer that
is substantially spherical toner particles.

20 8. The image forming device as claimed in claim 1,
wherein the developer amount detector includes a light-emitting element and a light-receiving element, the light-receiving element and the light-emitting element being disposed facing each other with the developer container
25 interposed therebetween, the developer amount detector

detecting the remaining developer amount in the developer container based on a ratio of light emitted from the light-emitting element to light received by the light-receiving element.

5 9. The image forming device as claimed in claim 8, wherein the developer container comprises:

a light-transmissive window that enables light emitted from the light-emitting element to be received by the light-receiving element; and

10 a cleaner that cleans the light-transmissive window.

10 10. The image forming device as claimed in claim 1, wherein the calculation performed by the controller includes performing a weighting operation on the remaining developer amount detected by the developer amount detector and the remaining developer amount indicated by the data stored in the memory.

11 11. The image forming device as claimed in claim 1, wherein the calculation performed by the controller includes performing an averaging operation on the remaining developer amount detected by the developer amount detector and the remaining developer amount indicated by the data stored in the memory.

12 12. The image forming device as claimed in claim 1, further comprising:

25 an image forming unit that, under control of the

controller, forms images using developer from the developer container; and

a power unit that supplies power to the image forming unit when turned on, the controller performing the warm-up operation as a result of the power unit being turned on.

5 13. The image forming device as claimed in claim 1, further comprising:

10 a usage determiner that determines an amount of usage of the developer container and stores data in the memory that represents the amount of usage; and

15 a new developer container determination unit that determines whether the developer container is new, the controller performing the warm-up operation and resetting the data in the memory that represents the amount of usage when the new developer container determination unit determines that the developer container is new.

20 14. The image forming device as claimed in claim 1, further comprising an image forming unit that, under control of the controller, forms images using developer from the developer container, the controller setting the image forming unit into a sleep mode under predetermined conditions and, under other predetermined conditions, releasing the image forming unit from the sleep mode and performing the warm-up operation.

25 15. The image forming device as claimed in claim 1,

further comprising:

a housing that houses the developer container;

a cover provided in the housing, the cover being openable for accessing the developer container;

5 a open/close detection unit that detects when the cover is opened and closed, the controller performing the warm-up operation when the open/close detection unit detects that the cover has been opened and closed.

10 16. An image forming device for forming a developer image on a recording medium, the image forming device comprising:

a developer container that accommodates developer;

a developer amount detector that detects a remaining developer amount accommodated in the developer container;

15 a display;

a memory that stores data representing a remaining developer amount detected by the developer amount detector; and

20 a controller that compares the remaining developer amount detected by the developer amount detector with the remaining developer amount indicated by the data stored in the memory and that controls to display a larger of the remaining developer amount detected by the developer amount detector and the remaining developer amount indicated by the 25 data stored in the memory.